<div align="center">REMARKS</div>

After entry of the foregoing amendment, claims 17-27 remain pending in the application.

Claims 6, 7, 9 and 12-16 are canceled to expedite prosecution. No surrender of subject matter is intended; Applicant reserves the right to pursue claims of similar scope in one or more related applications.

Claims 17-27 stand rejected under § 112, first paragraph (written description).

In connection with written description support for the claims, attention is drawn to the patents incorporated-by-reference into the present application.

For example, in patent 6,947,571 (incorporated at page 4, line 8) there are 50+ references to web browsers, which are launched and/or directed in accordance with watermark data, to present auxiliary data.

The present specification notes that interactive TV includes a data channel that accompanies the video, and that the TV vertical blanking interval (e.g., scanline 21) is commonly used for this data channel:

> One key component of interactive TV systems is a data channel to accompany the video. Numerous techniques have been proposed – the most common of which is to encode data in the vertical blanking interval (VBI) of traditional analog TV signals. Another is to modulate data onto scanline 21 – a scanline that is usually positioned off-screen.

(Page 1, lines 15-19).

As also explained in applicant's spec, in the interactive television system known as ATVEF, the VBI data channel conveys "triggers":

> *Transport Type A* . The Type A transport binding for NTSC is easy to describe. <u>ATVEF triggers are simply broadcast in line 21 of the VBI</u>. For purposes of data integrity, the NTSC binding for Transport Type A requires that each trigger contain a checksum. The binding also recommends that the trigger length not exceed 25% of the total bandwidth of the line, in order to avoid conflicts between triggers, closed captioning data, and data from any future services that might also use line 21.
> <u>While ATVEF triggers could have been placed on some other line of the VBI, placing them on line 21 has advantages</u> for receiver manufacturers. For example, most standard NTSC video decoder chips already have the ability to extract line 21 of the VBI (for closed captioning support). By placing triggers

in that same line, hardware manufacturers are not forced to upgrade to more expensive decoders that support data extraction in other lines of the VBI.

Transport Type B . <u>In addition to sending triggers on line 21 of the VBI</u>, the Transport Type B NTSC binding includes a mechanism for delivering IP datagrams over the other VBI lines. IP over VBI (IP/VBI) is an Internet Draft of the Internet Engineering Task Force (IETF). As such, IP/VBI is not yet a standard, just a work in progress. Therefore, some details of some of the encapsulation, compression, and error detection schemes may change, but the architecture is unlikely to change radically.

(Appendix B of applicant's specification, page 48; underlining added).

The ATVEF "triggers" typically comprise URLs, from which content

enhancements are obtained:

In addition to defining what ATVEF content looks like, the specification also defines how the content gets from the broadcaster to the receiver, and how the receiver is informed that it has enhancements available for the user to access. The latter task is accomplished with triggers.

Triggers

<u>Triggers are mechanisms used to alert receivers to incoming content enhancements. They are sent over the broadcast medium and contain information about enhancements that are available to the user. Among other information, every trigger contains a standard Universal Resource Locator (URL) that defines the location of the enhanced content.</u> ATVEF content may be located locally—perhaps delivered over the broadcast network and cached to a disk—or it may reside on the Internet, another public network, or a private network.

Besides containing information about where the enhanced content is located, triggers may also contain a human-readable description of the content. For example, a trigger may contain a description like, "Press Browse for more information about this show…," that can be directly displayed by the receiver in order to provide information about the nature of the content to the user. Triggers may also contain expiration information to provide the receiver with contextual information about how long the content should be offered to the viewer and a checksum to ensure the integrity of the delivered information.

(Appendix B to applicant's specification, page 45; underlining added).

Applicant's specification explains that watermark technology is employed as a

data channel in an interactive television system (page 1, lines 30-31). The invention is

particularly described in the context of an ATVEF interactive television system (page 2, lines 12-14). The specification thereby teaches that watermarks are used to convey triggers (e.g., URLs) used in ATVEF to identify content enhancements.

Such content enhancements are used to augment the user's experience. For example, the specification notes that clicking on Dan Merino's football jersey during Monday Night Football "*maypop up a description of the collectible garment, with an opportunity to purchase one right away*" (Appendix B to applicant's specification, page 50). Thus, the rendered content includes both the original content, plus auxiliary content obtained through use of the watermark data.

Similarly, claim 21 is fully supported by applicant's specification.

In connection with "a portable apparatus, a wireless interface, a 2D optical scanner and the ability to receive emails and make phone calls," consider, *e.g.*, PDAs (noted at page 2, line 18 of the present specification), as well as devices detailed in incorporated-by-reference patent 6,947,571. Such devices include cell phones equipped with a camera and voice/email capabilities, and designed to display video on their screens, *e.g.*:

> Cell Phones as Bedoop[1] Devices; GPS Receivers
>   Bedoop technology can be integrated into portable telecommunication terminals, such as cell phones (manufactured, e.g., by Motorola, Nokia, Qualcomm, and others). Such a phone can be equipped with a 1D or 2D image sensor, the output of which is applied to Bedoop decoding circuitry within the phone. This decoding circuitry can be the phone's main CPU, or can be a processing circuit dedicated to Bedoop functionality. (In this as in other embodiments, the decoding can be effected by dedicated hardware, by decoding software executing on a general purpose CPU, etc.)
>   Cell phones are already equipped with numerous features that make them well suited for Bedoop operation. One is that cell phones typically include an LCD or similar screen for display of textual or graphic information, and additionally include buttons or other controls for selecting among menu options presented on the screen (e.g., by moving a cursor). Moreover, cell phones naturally include both audio input and output devices (i.e., microphone and speaker). Still further, the protocol by which cell phones transmit data includes data identifying the phone, so that such data need not be separately encoded. And finally, cell phones obviously provide ready links to remote computer systems. Collectively, these capabilities rival those of the most fully-equipped desktop computer system. Thus, essentially all of the applications detailed elsewhere in this

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[1]   Bedoop generally refers to a system that is watermark-responsive.

specification can be implemented using cell phone Bedoop systems.

As with the other Bedoop systems, when Bedoop data is sensed, the phone can respond to the data locally, or it can forward same over the cellular network to a remote system (or computer network) for handling.

...

The provision of <u>image sensors in cell phones</u> enables other functionality. One is the capture of still or video imagery. Such image data can be compressed (typically by lossy processes such as MPEG, JPEG, or the like, implemented with dedicated hardware CODECs) and transmitted with the audio data. <u>The screens on such phones can likewise be used for display of incoming image or video data.</u>

(Col. 45, lines 24-55; underlining added.) And:

<u>As telephones evolve into more capable, multi-function devices,</u> other manipulations can invoke other actions. In a computer/telephone hybrid device, for example, rotating the photo counterclockwise may launch a web browser to an address at which video data from a web cam at the pictured person's home is presented. <u>Rotating the photo clockwise may present an e-mail form, pre-addressed to the e-mail address of the depicted person.</u>

(Col. 29, lines 26-33.)

Applicant taught applicability of elements and features from the present specification in the arrangements detailed patent 6,947,571 by language at page 4, lines 22-25.

Turning to the art-based rejections, claim 17 is rejected over Chen (WO02/07425) in view of Steinhorn (1999).

As a preliminary matter, it is not evident that Chen's teachings are properly "prior art."

Chen was published in 2002; the present application was filed in 2001. Thus, if Chen is to be prior art, it must be as a § 102(e) reference.

PCT publications can qualify as § 102(e) references, and be given a prior art effective date prior to their publication date, if three conditions are met (MPEP § 706.02(f)(1)):

- It has an international filing date on or after November 29, 2000;

- It designated the United States; and

- It was published under PCT Article 21(2) in English.

Chen appears to meet these conditions. However, that merely entitles Chen to be given prior art effect as of its international filing date, which was June, 2001. (The present application claims priority to a provisional application filed in November, 2000.)

For Chen to be given an effective prior art date before its international filing date (i.e., the date of its priority US application 09/616,518, which was July, 2000), the subject matter for which Chen is cited must have been properly supported (§112, first paragraph) in that US priority application.

The PTO's PAIR system states that Chen's priority application 09/616,518 "*is assigned to an application that is not yet available for public inspection.*"

Whether Chen's teachings in his PCT application are properly available for citation against the present application depends on the contents of Chen's US priority application. Since the Office has not made any showing as to its contents, applicant respectfully submits that rejections based on Chen (PCT) have not met a *prima facie* threshold.

Assuming for a moment that Chen is properly available as prior art, applicants nonetheless submit that *prima facie* obviousness has not been established.

For example, claim 17 requires processing circuitry operative to: launch a web browser (if one is not already running), utilize the web browser in accordance with decoded watermark data to obtain auxiliary content, and render content for output including both the first content data and the auxiliary content.

None of these elements appears to be taught by Chen. Indeed, his specification includes no instance of the word "web" nor "browser."

Admittedly, web browsers *per se* are old. However, the Action stretches too far by asserting that Chen's reference on page 38 to HTML (which is in the context of decoding watermark data *from* HTML objects) teaches the concluding limitations of

claim 17 (e.g., "*said rendered content including both said first content data, and auxiliary content obtained through use of said watermark data*).

(Claim 17 has also been amended to further define implementation of the claimed layered arrangement. The amended claim requires software instructions that are operative (through the processor) to "*define a software interface through which watermark decoding functionality provided by said watermark decoder can be invoked by said apparatus, the software interface masking details of a particular hardware design by which said watermark decoder is implemented.*")

Claims 21-27 stand rejected over Lortz (6,349,410) in view of Chen, and Philyaw (6,970,914) and Hsu (6,295,058).

Lortz relates to arrangements that allow broadcast television to be paused (while being stored on a storage device) so that web browsing related to the television program can be conducted. His "web pad" 80 (Fig. 3) is a handheld web browser with a screen on which web content is displayed. It also includes a button that causes the television broadcast (displayed on a different display) to be paused.

Chen is a system for variable-rate modulation and demodulation of data using information embedding in television signals.

Philyaw discloses a system for embedding routing information to a remote web site in an audio-video track.

Hsu details a method and apparatus for creating multimedia electronic mail messages or greeting cards on an interactive receiver.

Again, applicant respectfully submits that the Office has not met the *prima facie* burden of establishing that Chen's PCT filing is, in fact, available as § 102(e) prior art.

Assuming for a moment that Chen is properly available as prior art, applicant requests reconsideration.

Claim 21 has been amended to recite additional details of the claimed layered arrangement, further distinguishing the art.

As amended, claim 21 now requires *"a software interface through which a request to invoke watermark decoding functionality can be passed down from a higher layer to said watermark decoder, and through which results of watermark decoding can be returned up to said higher layer, the software interface serving to mask implementation details of said watermark decoder from said higher layer.*

For the "layered" aspect of the claim, the Office cited Lortz, noting:

> *"Lortz receives additional content from the internet, which is a layered protocol. To interface with the internet, it is necessary for Lortz to take signals received at the physical layer and pass them up to the application layer so that they can be viewed or interacted with by the user, cols. 2 and 3, lines 45-67 and 1-45.*

It will be recognized that the amended claim now recites additional limitations concerning the "layered" arrangement, which are not taught or suggested by the art. Thus, even if the art were combined as proposed, the arrangement of claim 21 would not result.

Moreover, claim 21 has been further amended to specify that the watermark decoder operates on <u>digital audio or video received using the wireless interface</u>. This moots the rationale by which combination of Philyaw with Lortz/Chen was justified (i.e., to sense visible light from a display and generate a signal from which the supplemental data can be decoded).

In view of the foregoing, claim 21 is now believed to be in condition for allowance (together with claims dependent thereon).

The Examiner is invited to telephone the undersigned if it might aid in disposition of this application.

Respectfully submitted,

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